

WHAT IS CLAIMED IS:

1. A method for inhibiting the growth of a *Staphylococcal* or *Haemophilus* species comprising contacting said species with a peptide comprising the sequence KQRDSRSGYTAPTLV (SEQ ID NO:1), KKSHHPSSEWGLNLT (SEQ ID NO:2), GRHRTSVPTDEVFIT (SEQ ID NO:3), KQRTSIRATEGCLPS (SEQ ID NO:4), RNHGTDRAATTIPPLS (SEQ ID NO:5), GSRGKHTFVRPTLVF (SEQ ID NO:6), FISYSSPSHMGARMR (SEQ ID NO:7) and/or VVFLSSRNSAVFTDF (SEQ ID NO:8).
2. The method of claim 1, wherein said peptide comprises the sequence KQRDSRSGYTAPTLV (SEQ ID NO:1).
3. The method of claim 1, wherein said peptide comprises the sequence KKSHHPSSEWGLNLT (SEQ ID NO:2).
- 15 4. The method of claim 1, wherein said peptide comprises the sequence GRHRTSVPTDEVFIT (SEQ ID NO:3).
5. The method of claim 1, wherein said peptide comprises the sequence KQRTSIRATEGCLPS (SEQ ID NO:4).
- 20 6. The method of claim 1, wherein said peptide comprises the sequence RNHGTDRAATTIPPLS (SEQ ID NO:5).
7. The method of claim 1, wherein said peptide comprises the sequence VVFLSSRNSAVFTDF (SEQ ID NO:6).
8. The method of claim 1, wherein said peptide comprises the sequence GSRGKHTFVRPTLVF (SEQ ID NO:7).
- 25 9. The method of claim 1, wherein said peptide comprises the sequence FISYSSPSHMGARMR (SEQ ID NO:8).
10. The method of claim 1, wherein said species is a *Staphylococcal* species.

11. The method of claim 10, wherein said *Staphylococcal* species is *S. aureus*.
12. The method of claim 1, wherein said species a *Haemophilus* species.
13. The method of claim 12, wherein said *Haemophilus* species is *H. influenzae*.
14. The method of claim 13, wherein said *H. influenzae* species is non-typeable *H. influenzae*.
- 5 15. The method of claim 1, wherein said peptide is between 15 and about 50 residues in length.
16. The method of claim 1, wherein said peptide is between about 15 and 25 residues in length.
- 10 17. The method of claim 1, wherein said peptide is 15 residues in length.
18. The method of claim 1, further comprising contacting said species with a chemopharmaceutical antibiotic.
19. A method for treating a bacterial infection in a subject comprising contacting said subject with a peptide comprising the sequence KQRDSRSGYTAPTLV (SEQ ID NO:1), KKSHHPSSEWGLNLT (SEQ ID NO:2), GRHRTSVPTDEVFIT (SEQ ID NO:3), KQRTSIRATEGCLPS (SEQ ID NO:4), RNHGTDRATTIPPLS (SEQ ID NO:5), GSRGKHTFVRPTLVF (SEQ ID NO:6), FISYSSPSHMGARMR (SEQ ID NO:7) and/or VVFLSSRNSAVFTDF (SEQ ID NO:8) in an amount sufficient to inhibit the growth of bacteria *in vivo*.
- 15 20. The method of claim 1, wherein said peptide comprises the sequence KQRDSRSGYTAPTLV (SEQ ID NO:1).
21. The method of claim 1, wherein said peptide comprises the sequence KKSHHPSSEWGLNLT (SEQ ID NO:2).
22. The method of claim 1, wherein said peptide comprises the sequence GRHRTSVPTDEVFIT (SEQ ID NO:3).
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23. The method of claim 22, wherein said peptide comprises the sequence KQRTSIRATEGCLPS (SEQ ID NO:4).

24. The method of claim 22, wherein said peptide comprises the sequence RNHGTDRAATTIPPLS (SEQ ID NO:5).

5 25. The method of claim 22, wherein said peptide comprises the sequence VVFLSSRNSAVFTDF (SEQ ID NO:6).

26. The method of claim 22, wherein said peptide comprises the sequence GSRGKHTFVRPTLVF (SEQ ID NO:7).

10 27. The method of claim 22, wherein said peptide comprises the sequence FISYSSPSHMGARMR (SEQ ID NO:8).

28. The method of claim 22, wherein said species is a *Staphylococcal* species.

29. The method of claim 22, wherein said *Staphylococcal* species is *S. aureus*.

30. The method of claim 22, wherein said species a *Haemophilus* species.

31. The method of claim 30, wherein said *Haemophilus* species is *H. influenzae*.

15 32. The method of claim 31, wherein said *H. influenzae* species is non-typeable *H. influenzae*.

33. The method of claim 22, wherein said peptide is between 15 and about 50 residues in length.

20 34. The method of claim 22, wherein said peptide is between about 15 and 25 residues in length.

35. The method of claim 22, wherein said peptide is 15 residues in length.

36. The method of claim 22, wherein said peptide is delivered local or regional to a site of infection.

37. The method of claim 36, wherein said peptide is administered to a wound site.

38. The method of claim 36, wherein said peptide is administered topically.

39. The method of claim 22, wherein said peptide is delivered systemically.

40. The method of claim 39, wherein said peptide is delivered via intravenous or
5 intraarterial injection.

41. The method of claim 22, further comprising administering to said subject a chemopharmaceutical antibiotic.

42. A method for preventing a bacterial infection in a subject comprising contacting said subject with a peptide comprising the sequence KQRDSRSGYTAPTLV
10 (SEQ ID NO:1), KKSHHPSSEWGLNLT (SEQ ID NO:2), GRHRTSVPTDEVFIT (SEQ ID NO:3), KQRTSIRATEGCLPS (SEQ ID NO:4), RNHGTDRAATTIPPLS (SEQ ID NO:5), GSRGKHTFVRPTLVF (SEQ ID NO:6), FISYSSPSHMGARMR (SEQ ID NO:7) and/or VVFLSSRNSAVFTDF (SEQ ID NO:8) in an amount sufficient to inhibit the growth of bacteria *in vivo*.

15 43. A method for preventing bacterial growth in a solution comprising mixing said solution with a peptide comprising the sequence KQRDSRSGYTAPTLV (SEQ ID NO:1), KKSHHPSSEWGLNLT (SEQ ID NO:2), GRHRTSVPTDEVFIT (SEQ ID NO:3), KQRTSIRATEGCLPS (SEQ ID NO:4), RNHGTDRAATTIPPLS (SEQ ID NO:5), GSRGKHTFVRPTLVF (SEQ ID NO:6), FISYSSPSHMGARMR (SEQ ID NO:7) and/or VVFLSSRNSAVFTDF (SEQ ID NO:8) in an amount sufficient to inhibit the growth of bacteria *in vivo*.

20 44. A method for preventing bacterial attachment or growth on an abiotic surface comprising coating said surface with a peptide comprising the sequence KQRDSRSGYTAPTLV (SEQ ID NO:1), KKSHHPSSEWGLNLT (SEQ ID NO:2), GRHRTSVPTDEVFIT (SEQ ID NO:3), KQRTSIRATEGCLPS (SEQ ID NO:4), RNHGTDRAATTIPPLS (SEQ ID NO:5), GSRGKHTFVRPTLVF (SEQ ID NO:6), FISYSSPSHMGARMR (SEQ ID NO:7) and/or
25 FISYSSPSHMGARMR (SEQ ID NO:7) and/or VVFLSSRNSAVFTDF (SEQ ID NO:8) in an amount sufficient to inhibit the growth of bacteria *in vivo*.

VVFLSSRNSAVFTDF (SEQ ID NO:8) in an amount sufficient to inhibit the growth of bacteria *in vivo*.

45. The method of claim 44, wherein said surface is part of a medical device.

46. The method of claim 45, wherein said medical device is a syringe, a stent, a catheter, fluid container, a pacemaker, or an implantable pump.

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47. A medical device, a surface of which is coated with a peptide comprising the sequence KQRDSRSGYTAPTLV (SEQ ID NO:1), KKSHHPSSEWGLNLT (SEQ ID NO:2), GRHRTSVPTDEVFIT (SEQ ID NO:3), KQRTSIRATEGCLPS (SEQ ID NO:4), RNHGTDRATTIPPLS (SEQ ID NO:5), GSRGKHTFVRPTLVF (SEQ ID NO:6), FISYSSPSHMGARMR (SEQ ID NO:7) and/or VVFLSSRNSAVFTDF (SEQ ID NO:8) in an amount sufficient to inhibit the growth of bacteria *in vivo*.

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48. The device of claim 47, wherein said medical device is a syringe, a stent, a catheter, fluid container, a pacemaker, a bandage, or an implantable pump.

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49. The device of claim 47, wherein said medical device is coated with a second antibiotic agent.

50. A method of screening a phage display library against intact virulent *Haemophilus influenzae* comprising:

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(a) providing a phage library;

(b) providing intact virulent *H. influenzae*;

(c) contacting said phage library with said *H. influenzae*;

(d) obtaining phage bound to said *H. influenzae*; and

(e) determining the sequence of a peptide expressed in said phage library that binds to said *H. influenzae*.

51. The method of claim 50, further comprising performing subtractive affinity selection of bound phage against avirulent *H. influenzae*.
52. The method of claim 50, further comprising assessing the effect of a peptide that binds said *H. influenzae* on bacterial surface adherence.
- 5 53. The method of claim 50, further comprising assessing the effect of a peptide that binds said *H. influenzae* on bacterial growth.
54. The method of claim 50, further comprising assessing surface adherence or growth of a second bacterial species in the presence of said peptide.
55. The method of claim 50, wherein steps (c) and (d) are repeated at least once.
- 10 56. A peptide identified according to a method comprising the steps of:
 - (a) providing a phage library;
 - (b) providing intact virulent *H. influenzae*;
 - (c) contacting said phage library with said *H. influenzae*;
 - (d) obtaining phage bound to said *H. influenzae*;
 - 15 (e) performing subtractive affinity selection against avirulent *H. influenzae*;
and
 - (f) determining the sequence of a peptide expressed in said phage library that binds to said *H. influenzae*.
- 20 57. An isolated peptide of 15 to about 50 residues comprising the sequence KQRDSRSGYTAPTLV (SEQ ID NO:1), KKSHHPSSEWGLNLT (SEQ ID NO:2), GRHRTSVPTDEVFIT (SEQ ID NO:3), KQRTSIRATEGCLPS (SEQ ID NO:4), RNHGTDRAATTIPPLS (SEQ ID NO:5), VVFLSSRNSAVFTDF (SEQ ID NO:6), GSRGKHTFVRPTLVF (SEQ ID NO:7), or FISYSSPSHMGARMR (SEQ ID NO:8).
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58. A method for identifying a bacterial receptor comprising:

(a) providing a sample suspected of comprising a bacterial receptor;

5 (b) providing a peptide comprising the sequence KQRDSRSGYTAPTLV (SEQ ID NO:1), KKSHHPSSEWGLNLT (SEQ ID NO:2), GRHRTSVPTDEVFIT (SEQ ID NO:3), KQRTSIRATEGCLPS (SEQ ID NO:4), RNHGTDRATTIPPLS (SEQ ID NO:5), VVFLSSRNSAVFTDF (SEQ ID NO:6), GSRGKHTFVRPTLVF (SEQ ID NO:7), or 10 FISYSSPSHMGARMR (SEQ ID NO:8);

(c) contacting said sample with said peptide; and

(d) identifying a receptor that binds to said peptide.

59. The method of claim 58, wherein said sample is a whole bacterium.

15 60. The method of claim 58, wherein said sample is a bacterial cell wall.

61. The method of claim 58, wherein said peptide is fixed to a support.

20 62. The method of claim 61, wherein said support is a filter, a column, a bead, a dipstick or a gel.

63. The method of claim 58, further comprising degradative sequencing of said identified receptor.

25 64. The method of claim 63, further comprising designing a degenerative probe based on the sequence of said identified receptor.

65. The method of claim 64, further comprising using said degenerative probe to 30 identify the gene encoding said identified receptor.